



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/085,973	02/28/2002	Jack Kelly	KSU.P0232	1213

7590 07/11/2003  
Ray L. Weber, Esq.  
Renner, Kenner, Greive, Bobak, Taylor & Weber  
First National Tower - 4th Floor  
Akron, OH 44308-1456

EXAMINER

WANG, GEORGE Y

ART UNIT	PAPER NUMBER
----------	--------------

2871

DATE MAILED: 07/11/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/085,973

Applicant(s)

KELLY ET AL.

Examiner

George Y. Wang

Art Unit

2871

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☒ Claim(s) 2,4 and 9-11 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 November 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

## **DETAILED ACTION**

### ***Information Disclosure Statement***

1. The information disclosure statement filed 04 June 2002 fails to comply with 37 CFR 1.98(a)(3) because it does not include a concise explanation of the relevance, as it is presently understood by the individual designated in 37 CFR 1.56(c) most knowledgeable about the content of the information, of each patent listed that is not in the English language. It has been placed in the application file, but the information referred to therein has not been considered.

### ***Specification***

2. The disclosure is objected to because of the following informalities:
- The Summary of Invention merely recites the claims and is therefore improper, and
  - On pages 36-38, Tables 1-3 are improper because they should be include in the drawings and not the specification.

Appropriate correction is required.

### ***Claim Objections***

3. Claim 2 is objected to because it includes improper designation of the symbol, “/.”
- Appropriate correction is required.

Art Unit: 2871

4. Claim 4 is objected to because the phrase "rod-like" renders the claim(s) indefinite because the claim(s) include(s) elements not actually disclosed (those encompassed by "-like"), thereby rendering the scope of the claim(s) unascertainable. See MPEP § 2173.05(d). Appropriate correction is required.

5. Claims 9-11 are objected to because they recite "other layer," to which there insufficient antecedent basis. It is unclear what layer the applicant is referring to. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. Claims 1 and 3-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Winker et al. (U.S. Patent No. 5,504,603, from hereinafter "Winker") in view of Yeh et al. (U.S. Patent No. 5,196,953, from hereinafter "Yeh"), and in further view of Nakamura (U.S. Patent No. 5,568,290).

8. Regarding claims 1 and 6, Winker discloses a liquid crystal display (LCD) with a liquid crystal cell (fig. 2, ref. 226) with a twisted nematic (TN) mode (abstract) and a first compensation layer (fig. 2, ref. 250) on one side of the TN cell with an elliptically polarizing plate containing a polarizer (fig. 2, ref. 222), a first and second optical anisotropic layer having positive refractive index anisotropy and where the first and second optical axis anisotropy are tilted.

However, the reference fails to specifically disclose anisotropic layers with positive and negative refractive index anisotropy and tilted optical anisotropy.

Yeh discloses an LCD with an elliptically polarizing plate having layers with positive and negative optical axis anisotropy (abstract).

Nakamura discloses anisotropic layers with tilted optical anisotropy (col. 8, lines 28-46).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have anisotropic layers with positive and negative refractive index anisotropy since one would be motivated to compensate for phase retardation and improving the viewing contrast and color rendition at oblique viewing angles (Yeh,

Art Unit: 2871

col. 2, lines 3-8). Furthermore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have anisotropic layers with tilted optical anisotropy since one would be motivated to improve durability under stressful conditions such as high temperature and humidity, and is greatly improved in coloring and high contrast when viewed from an angle (Nakamura, col. 3, lines 34-51).

9. As to claim 3, Winker discloses an elliptical polarizing plate as recited above where the tilt directions of the optical axis of the optical anisotropic layers are configured orthogonal to each other (col. 5, lines 3-20).

10. Regarding claims 4-5, Winker disclose an elliptical polarizing plate as recited above, however the reference fails to specifically teach a first optical anisotropic layer made of nematic liquid crystal molecules and the second optical anisotropic layer made of discotic liquid crystal molecules.

Nakamura discloses an elliptical polarizing plate with a first optical anisotropic layer made of nematic liquid crystal molecules (fig. 5, ref. 57) and the second optical anisotropic layer made of discotic liquid crystal molecules (fig. 1, ref. 13).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have included an elliptical polarizing plate with a first optical anisotropic layer made of nematic liquid crystal molecules and the second optical anisotropic layer made of discotic liquid crystal molecules since one would be motivated to provide a liquid crystal cell with improved durability under stressful conditions, such

as high temperature and humidity and improved coloring even at severe viewing angles (col. 5, lines 6-19).

11. As per claim 7, Winker discloses an LCD as recited above with a second compensation layer (fig. 2, ref. 252) on the side of the liquid crystal opposite the first compensation layer.

12. Regarding claims 8-11, Winker et al. discloses and LCD as recited above having compensation layers with index of refraction relationships of  $n_x > n_y = n_z$  (Yeh, col. 2, lines 31-57),  $n_x = n_y > n_z$  (Yeh, col. 2, lines 31-57),  $n_x < n_y = n_z$  (Nakamura, col. 16, line 15), and  $n_x > n_y > n_z$  (Nakamura, col. 16, line 7).

13. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Winker, Yeh, and Nakamura, in view of Cobb, Jr. et al. (U.S. Patent No. 5,825,542, from hereinafter "Cobb").

Winker et al. disclose the LCD as recited above, however, the references fail to specifically disclose a polarizer and optical layers that are laminated.

Cobb discloses polarizing layers that are laminated (col. 3, lines 35-41).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have laminated the optical layers since one would be motivated to provide protection and alterability of optical properties on these layers if necessary, such as index of refraction, reflective, and transmissive characteristics.

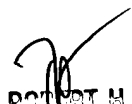
***Conclusion***

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to George Y. Wang whose telephone number is 703-305-7242. The examiner can normally be reached on M-F, 8 am - 4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert H. Kim can be reached on 703-305-3492. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-7722 for regular communications and 703-308-7724 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

gw  
June 30, 2003

  
ROBERT H. KIM  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2000